REMARKS/ARGUMENTS

Claims 1-2, 4-19 and 21-28 are pending in this application. In this Response, claims 1 and 18 are amended to further clarify applicants' claimed process, i.e., they are not believed to diminish to any degree the scope of the claims previous to the indicated amendment. The amendments made to the subject claims are entirely supported by the application as originally filed. Thus they raise no issue of new matter. Additionally, claim 13 is amended herein to change its dependency. This amendment, as well, adds no new matter to the application. Entry of the proposed claim amendments into the file of this application is respectfully requested. Upon such entry, the claims as amended, i.e., nos. 1-2, 4-19 and 21-28, are all believed to be in condition for allowance, for the reasons provided below.

Claim Rejections Under 35 U.S.C. §112

Claim 13 is rejected under 35 U.S.C. §112, second paragraph, as being allegedly indefinite due to the fact that it depends from claim 3, which has been canceled.

In response to this ground for rejection, claim 13 has been amended as shown above to change its dependency from claim 3 to claim 1. The amendment to the claim is believed to overcome the above-described ground for rejection, which should therefore be withdrawn.

Claim Rejections Under 35 U.S.C. §103

In ¶2 on p. 3 of the Office Action the Examiner continues to maintain her rejection of certain of applicants' claims, namely nos. 1, 2, 6-12, 15, 16, 18, 19, 21, 27 and 28, under 35 U.S.C. §103(a) over Sanders USP 6,656,287 in view of Schultheiss, Processing of Sugar Beets With Pulsed Electric Fields, *IEEE Transactions on Plasma Science*, Vol. 30, No. 4, August 2, 2002. The rejection is respectfully traversed.

The features which, in applicants' view serve to distinguish the claims of the present application over the cited combination of references, are extensively discussed in several responses previously filed in this case. Those remarks are, therefore, specifically incorporated by reference into the present Amendment.

According to the Examiner's remarks concerning applicants' independent process claims 1 and 18 at, respectively, pp. 3-4 and 6-7 of the Office Action, the Sanders reference is cited due to its disclosure with regard to a process system to produce sugar from plant materials, such as sugar cane, sugar beets and chicory. The reference does not, however, specify the use of electroporation. The Examiner has thus combined the Schultheiss reference, which does disclose to electroporate plant material, to supply the element of the process claimed by applicants that is missing from Sanders.

The Examiner states, however, in the portions of the Office Action dealing with the rejection of both independent claim 1 and independent claim 18 that, "the key concept of the Sanders [reference] is the necessity to raise the pH up to 12.5 pH of the extractant after [the] diffusion process (called [a] preliming step) to enable certain non-sucrose substances contained in juices to decompose and to reach their respective isoelectric point." The Examiner then goes on to state, in regard to both claims 1 and 18, that it would have been "obvious" to combine, "the teaching of Schultheiss of electroporation for sugar beets at low mechanical loading with the teaching of Sanders of alkaline treatment of the extracted liquid from biological materials after diffusion process . . . . ". (emphasis supplied by applicants). Finally, in the "Response to Arguments" on p. 8 of the Action the Examiner again mentions, ". . . [t]he teaching of Sanders, especially the alkaline treatment (the step of adding base as called by Sanders) to the biological material up to pH 12.5 is key to improve the yield of extraction as non-sucrose materials and other components that are not stable to decompose." As is discussed below, however, the above-quoted statements, rather than supporting the Examiner's rejection, actually serve to highlight an important distinction between applicants' claimed process in comparison to the process described in the Sanders reference. Furthermore, as additionally noted below, claims 1 and 18 are amended in this Response to further highlight this significant difference.

As noted even by the Examiner, therefore, Sanders teaches one of ordinary skill in this field to separate juice from the plant material and then to subject the juice thus removed to an alkaline extraction, i.e., to remove non-sucrose substances contained in the juice thus extracted. In contrast, however, applicants' claims 1 and 18 recite a process wherein, first, the biological material is electroporated, next the cell juice is separated off from the electroporated biological

material, and then the electroporated plant material from which the juice has been extracted is subjected to alkaline extraction, i.e., to remove additional desired ingredients from the electroporated biological material. It is not the juice in applicants' method that is undergoing the alkaline extraction, it is the electroporated plant material from which the juice has been separated.

As indicated above, therefore, sub-paragraph (c) in both claim 1 and claim 18 have been amended to recite that it is the biological material, from which at least some cell juice has been removed via electroporation, that is subjected to an alkaline extraction. Applicants respectfully submit that they believe that the Examiner may have been construing the language previously set forth in claims 1 and 18 to mean that it is the cell juice which has been separated off from the electroporated plant material which is subjected to an alkaline extraction, That is not so, however. In fact, as noted above, in applicants' claimed process the plant material is electroporated, following which the released cell juice is separated from the electroporated plant material, after which the electroporated plant material is alkaline extracted in order to obtain by removal therefrom some additional useful materials.

Clearly, therefore, the process recited in applicants' independent claims 1 and 18 is neither taught nor even suggested by Sanders taken in combination with Schultheiss. The cited combination may teach one having ordinary skill in this art to electroporate plant material, then to separate off the cell juice, following which the separated cell juice is subjected to an alkaline extraction, but it neither teaches nor suggests that it is the electroporated biological material, as recited in applicants' claims, that undergoes an alkaline extraction. Furthermore, neither Sanders not Schultheiss contain any disclosure such that, when these references are combined, would suggest to one of ordinary skill to further modify Sanders by subjecting electroporated biological material to an alkaline extraction treatment, i.e, in order to recover any additional material from such biological material.

Pursuant to the amendments made to claims 1 and 18, and in light of the arguments presented above the Examiner is respectfully to reconsider and withdraw the rejection under 35 U.S.C. 103(a) of the subject claims. Furthermore, as the remaining rejected claims all depend, directly or indirectly, from one or the other of claims 1 and 18 and, as such, contain all of the

features recited in the 'parent' independent claims, those dependent claims also are believed to be distinguishable for the same reasons as nos. 1 and 18, The Examiner, thus, is requested to also withdraw the rejection under §103(a) of the subject dependent claims.

In ¶17 on p. 7 of the Action claims 4, 5, 14, 17 and 21-24 are rejected under 35 U.S.C. §103(a) over Sanders in view of Schultheiss as applied to claims 1, 10 and 18 and further in view of "Eugene et al." [*sic.* Vorobiev et al.] EP 1257413 or WO 0162482 (machine translation provided). This rejection is also respectfully traversed.

In ¶17 on p. 7 the Office Action acknowledges that neither Sanders nor Schultheiss discuss the details of the feeding screw despite that both do use screw conveyors for the process of extracting liquids or sugars out of plant materials, such as sugar beets. The Examiner, therefore, has combined Sanders and Schultheiss with newly cited reference WO 0162482 which, it is alleged, discloses a method of extracting liquid from cellular material .... by a combination of low mechanical pressing (a screw conveyor) at 0.1 MPa and electrical pulse device. The Office Action continues, at the top of p. 8, to state that Eugene [*sic.* Vorobiev et al.] discloses only a moderate pressure, essentially ranging between 1.105 Pa - 30 Pa and [that] it is unnecessary to use pressures during mechanical pressing (page 2) with a screw press.

Applicants' European representatives have discussed the original French text of the newly cited Vorobiev et al. reference with them. Based on their discussion, it is submitted that the reference does **NOT** disclose a method/apparatus where cell juice is separated off from biological material in a manner wherein the biological material remains substantially unaltered in its form and its character, i.e., as recited in applicants' claims. The subject reference, in fact, discloses several pressing means, including a filter press (see, e.g., figures 1-4); a spindle press (see fig. 5A); a screw press (fig. 5B) and a band press (fig. 6). The reference, moreover, teaches to press biological material in such a way that it is significantly altered in its form and character. According to various passages found in the text of the reference, a filter cake (i.e., a "gâteau" in the French text) is obtained in every instance once pressing takes place.

Further to the above, the reference teaches one to apply pressure either before or during the electroporation treatment (see, e.g., claims 1 and 2), which is in contrast to applicants'

claimed technique which recites the use of electroporation in a first step, followed by the separation of cell juice from the electroporated material in a separate, subsequent step.

Still further, the reference does not disclose the use of a full screw for conveying biological material from the electroporator to the diffusion extraction state, in contrast to what is recited (e.g., in claim 10) by applicants. On the contrary, the reference refers to "pressing means", such as a screw press (Fig. 5B) rather than "conveying means". To understand how applicants' claims are distinguishable, it is important to comprehend the distinction between a screw press which is used for pressing (and which thus does not maintain the biological material in a substantially unaltered state as to its form and character) - as taught for use by the reference, and a full screw used for conveying. A full screw, i.e., as used by applicants, does not press the biological material. Rather, it serves to simply convey material from one place to another. A screw press, however, contains material in a confined volume, which is reduced as the material passes through the press which, true to its name, presses the material. This may be seen, for example, in Fig. 5B of the reference wherein the spindle of the screw press is depicted as having a conical shape. In contrast, a full screw (as used by applicants) does not decrease the space available for the material thus conveyed and, thus, it does not exert any pressure on such material.

To illustrate the above distinction, attached at the end of this Amendment as Attachment A are several schematic drawings illustrating examples of full screws for comparison against Attachment B, which is a copy of the screw press in Fig. 5B of the cited Vorobiev et al. reference (WO 01/62482).

Based on the remarks provided above, therefore, the Examiner is respectfully requested to reconsider and withdraw the rejection of applicants' claims 4, 5, 14, 17 and 21-24 under §103(a) based on the combination of Sanders, Schultheiss and WO/0162482.

Summary

The claim amendments and remarks presented herein are believed to overcome all of the grounds for rejection set forth in the Office Action and to place the entire application in a condition for allowance.

If the Examiner does not agree, however, if she believes that an interview would materially advance the progress of this application, she is respectfully invited to telephone applicants' representative at the number below in order that an interview concerning the application may be arranged.

Respectfully submitted,

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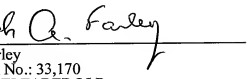

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